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Wang et al.

(54) MACROBLOCK LEVEL ADAPTIVE FRAME/FIELD CODING FOR DIGITAL VIDEO CONTENT

(75) Inventors: Limin Wang, San Diego, CA (US);
Rajeev Gandhi, San Diego, CA (US);
Krit Panusopone, San Diego, CA (US);
Ajay Luthra, San Diego, CA (US)

(73) Assignee: General Instrument Corporation,

Horsham, PA (US)

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(56) References Cited

U.S. PATENT DOCUMENTS

A	3/1984	Matsumoto et al.
A	5/1995	Tahara
A *	4/1996	Obikane et al 375/240.14
A	9/1998	Ju
A	7/2000	Han
B1	2/2001	Lin
B1	6/2002	Haskell et al.
	A A A * A A B1 B1	A 5/1995 A * 4/1996 A 9/1998 A 7/2000 B1 2/2001

OTHER PUBLICATIONS

"Core Experiment on Interlaced Video Coding", Peter Borgwart, VideoTele.com—A Tektronix Company, Study Group 16, Question 6

"Adaptive field/frame block coding experiment proposal", Interested Parties for the Study of Interlaced Video Coding with H.26L,Video Coding Experts Group, Study Group 16.

(Continued)

Primary Examiner—Shawn S. An (74) Attorney, Agent, or Firm—Larry T. Cullen

(57) ABSTRACT

A method and system of encoding and decoding digital video content. The digital video content comprises a stream of pictures which can each be intra, predicted, or bi-predicted pictures. Each of the pictures comprises macroblocks that can be further divided into smaller blocks. The method entails encoding and decoding each of the smaller blocks in each picture in said stream of pictures in either frame mode or in field mode.

19 Claims, 8 Drawing Sheets

